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VARIETAL DESCRIPTION OF DEUCE TWO-ROW SPRING BARLEY

Licensed: March 27, 1986, No. 2650

Origin and Breeding:

Deuce feed barley, tested as TR 484 and SB81163, is derived from the cross Summit/Norbert made at the Crop Development Centre, University of Saskatchewan, in 1978. The F3 and F4 generations were advanced by single seed descent. Single F4 plants were subsequently grown as F5 rows. One F5 line, designated SB81163, was harvested as a bulk row, and was yield tested during the F6 and F7 generations. Breeder seed was derived from a bulk of 151 F8 single plant selections. Selection criteria were yield, straw strength and disease resistance.

Varietal Characteristics

Plant Characteristics

Ploidy: diploid
Growth habit: spring
Seedling growth: erect
Coleoptile: green
Leaves: narrow, long; medium green; lower leaf sheath purplish; glabrous sheath and blade
Flag leaf: medium length and width; medium green; upright at boot stage; purplish auricles; waxy sheath
Stems: bluish green with waxy bloom; medium thickness; strong; 0-3 cm stem exsertion at maturity; closed collar; straight neck
Plant height: tall; 5-8 cm taller than Harrington and Abee
Heading: early; similar to Harrington
Maturity: similar to Harrington and Abee
Lodging resistance: very good; better than Harrington; much better than Abee
Disease reaction: resistant to powdery mildew (*Erysiphe graminis*), covered smut (*Ustilago hordei*), false loose smut (*Ustilago nigra*); moderately resistant to stem rust (*Puccinia graminis*); moderately resistant to moderately susceptible to common root rot (*Fusarium* spp.); susceptible to net blotch (*Drechslera* spp.), spot blotch (*Bipolaris sorokiniana*), scald (*Rhynchosporium secalis*), loose smut (*Ustilago nuda*) and Septoria glume blotch (*Septoria* spp.).

Spike characteristics

Type: two-rowed
Shape: strap; long; dense
Attitude: semi-nodding
Lemma: hairs absent; long rough awns with purplish tips
Glume: one-half length of lemma; rough awns with green tips; awn length equal to glume length; few medium to long hairs covering whole glume; empty glumes rounded
Stigma hairs: numerous
Rachis: segments slightly tapered; numerous medium length hairs on edges; first internode slightly curved

Kernel characteristics

Type: covered
Hull: slightly wrinkled
Kernel: mid-size
Aleurone: yellow
Rachilla: mid-long; short hairs; few abnormal rachillas
Basal marking: slight crease
Lateral veins: barbs absent; purple on lemma
Quality: normal hulled feed barley; not a malting variety

Inspection:

On the basis of kernel characteristics, Deuce would be excluded from the grades of barley higher than No. 1 feed.

Performance:

Deuce two-row feed barley yields well over all soil zones in western Canada. It has a high percentage of plump kernels and a good test weight. It has good lodging resistance. Deuce has short rachilla hairs and is, therefore, identifiable in the handling of grain to avoid mixtures with grain of malting quality. Deuce is adapted to all barley growing regions of western Canada including the eastern prairie region.

Maintenance of breeder seed: Crop Development Centre, University of Saskatchewan

Canadian distributor: SeCan Association

Recommended by: Saskatchewan Advisory Council on Crops

Supported by: Expert Committees on Grain Breeding and Grain Diseases

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EXPERIMENTAL DATA:

Table 1

Agronomic performance of Deuce and check varieties, Western Cooperative Two-Row Barley Tests, 1983-1985

Year	Variety	Yield (kg/ha)	Test Weight (kg/hL)	1000 kernel wt.(g)	% Plump kernels	Height (cm)	Lodging* (1-9)	Heading (days)	Maturity (days)
1983	Harrington	4920	61.6	39.5	80.9	75.4	3.1	60.5	90.0
	Abee	4960	63.6	39.6	75.5	75.2	4.2	61.0	92.1
	Klages	4670	61.7	37.7	60.9	79.3	3.1	63.2	93.4
	Deuce	5400	66.4	40.5	86.2	83.8	2.8	60.3	93.4
1984	Harrington	4250	64.4	41.0	78.5	62.3	2.3	55.9	88.8
	Abee	4450	65.2	40.4	70.1	61.8	3.3	56.9	89.3
	Klages	4100	64.1	40.0	59.2	64.7	4.4	58.1	91.2
	Deuce	4410	66.8	41.0	80.4	67.9	1.6	55.3	89.0
1985	Harrington	5500	64.8	47.2	93.8	67.1	2.5	60.3	97.9
	Abee	5610	66.6	47.5	91.9	66.8	4.4	60.0	97.9
	Klages	5110	65.2	48.5	91.1	69.2	3.1	62.4	100.9
	Deuce	5430	67.3	46.4	93.2	71.6	2.6	59.7	97.1

* 1 - best resistance

Table 2

Yield (kg/ha) by soil zones of Deuce and check varieties, Western Cooperative Two-Row Barley Tests, 1983-1985*

Year	Variety	Soil Zone: Black	Brown	Black And Grey	Mean**
		(3)[1]	(6)	(3)	
1983	Harrington	4470	5210	5890	4920
	Abee	4500	5120	5890	4960
	Klages	4410	4630	5720	4670
	Deuce	4870	5360	6020	5400
		(6)	(8)	(4)	
1984	Harrington	5410	3670	3660	4250
	Abee	5380	3910	4110	4450
	Klages	5200	3370	3910	4100
	Deuce	5370	3770	4260	4410
		(6)	(5)	(4)	
1985	Harrington	6430	4830	4930	5500
	Abee	6710	5070	4620	5610
	Klages	5920	4460	4710	5110
	Deuce	6490	4750	4680	5430
Mean[2]	Harrington	5630	4460	4730	4920
	Abee	5740	4600	4780	5020
	Klages	5430	4050	4700	4670
	Deuce	5720	5330	4890	5010

* locations 1983, Black soil zone: Brandon, Glenlea and Melfort
Brown soil zone: Elrose, Irricana, Lethbridge, Saskatoon, Swift Current and Watrous
Black and Gray soil zone: Beaverlodge, Lacombe and Provost
U.S. (N. Dakota): Prosper and Langdon

1984 & 1985, Black soil zone: Brandon, Glenlea, Indian Head, Melfort, North Battleford and Portage la Prairie
Brown soil zone: Acme, Elrose, Irricana, Lethbridge, Regina, Saskatoon, Scott, Swift Current and Watrous
Black and Grey soil zone: Beaverlodge, Calmar, Ft. Vermilion, Lacombe and Provost

** means overall station years
[1] numbers in parenthesis indicate station-years
[2] three year means (1983-1985) were used

Table 3

Disease reactions of Deuce and check varieties, Western Cooperative Two-Row Barley Tests, 1983-1985*

Year	Variety	%Common Root Rot		Spot Blotch (1-9)**		Scald (1-9)**	Net Blotch (1-9)**	Powdery Mildew (%)	Stem rust	Ustilago smuts % infected plants			Net Blotch[1] Culture #			Scald Culture #		Septoria Culture #
		Sask*	Scott	Pros	Lang	Bvld	Lang	Guelph	Glen	nuda	hordei	nigra	102	858	857	837	Leth	692
1983	Harrington	65	57	6.5	5.0	6.5	--	--	90S	84	14	9	S	VS	S	S	VS	S
	Abee	54	36	4.5	3.0	4.8	--	--	90S	42	11	6	MS-S	VS	S	S	S	S
	Klages	55	52	4.0	3.0	4.8	--	--	90S	54	5	5	S	VS	MS-S	S	MS	S
	Deuce	68	41	6.5	6.0	6.8	--	--	40MR-MS	90	0	1	MR-MS	S	MS	S	S	S
1984	Harrington	64	76	--	--	--	4.0	--	50MR-MS	86	7	18	9	10	8	S	S	S
	Abee	67	72	--	--	--	3.5	--	80S	72	2	°0	8	°0	7	S	S	S
	Klages	81	95	--	--	--	5.0	--	80S	83	0	2	10	10	7	S	S	S
	Deuce	71	69	--	--	--	2.5	--	40MR	82	3	0	7	8	7	S	S	S
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1985	Harrington	31	52	7.0	--	7.5	8.0	10	50S	96	27	32	9	10	8	MS	S	S
	Abee	43	46	6.5	--	7.5	8.0	30	60S	71	9	10	7	10	8	S	S	S
	Klages	30	82	6.0	--	8.0	8.0	30	60S	89	2	2	9	10	7	S	S	S
	Deuce	46	46	6.0	--	7.5	8.0	0	40MR	97	5	3	7	9	9	S	S	S

* locations were: for root rot trials Saskatoon and Scott; for spot blotch trials Prosper, Langdon (North Dakota) and Carrot River; for scald trials Beaverlodge, Carrot River; for net blotch trials Langdon (North Dakota) and Shellbrook; for powdery mildew trials, Guelph: for stem rust trials, Glenlea

** 1-9; 1 = no symptoms

1 Reaction categories: 10(VS) very susceptible; 9(S) susceptible; 7(MS) moderately susceptible; 5 (MR-MS) moderately resistant to moderately susceptible; 3(MR) moderately resistant; 1(R) resistant.